



WORKSHOP SUMMARY EPA REGION 10 STATE AND TRIBAL GUIDANCE ON TEMPERATURE WATER QUALITY STANDARDS

February 2002

The U.S. Environmental Protection Agency (EPA) Region 10 *State and Tribal Guidance on Temperature Water Quality Standards* has been developed to protect Pacific Northwest salmonids. EPA issued draft guidance in November 2001 and sponsored three public workshops in Oregon, Washington and Idaho in December 2001 to inform the public about the technical and policy decisions being made in the guidance and gather public comments on those decisions. *Note: A fourth workshop was held on February 12 in Kennewick, Washington. The information from that workshop will be added to this report following the public comment period.*

This summary presents comments, questions and recommendations resulting from the workshops. Some comments were general in nature and others applied to one of the four sections in the draft guidance: Thermal Potential Numeric Criteria; Species Life Stage Numeric Criteria; Temperature Management Plans; or Protection of Existing Cold Water Areas.

The first part of the summary introduces a synthesis of major issues resulting from the workshops and the second part of the summary presents a more complete record of workshop comments. EPA Region 10 plans to respond to these and other comments resulting from the written public comment process, closing on February 22, 2002.

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SYNTHESIS OF KEY ISSUES HEARD AT PUBLIC WORKSHOPS

General Comments and Questions

- Do the other federal agencies agree with the guidance?
- Is temperature really a problem for salmonids? The Columbia River has had recent record numbers of fish. Fish seem to be doing fine, despite warm temperatures in some areas. Aren't fish passages (culverts) a more important problem?
- Can't we have a "healthy fish" standard as opposed to indirectly trying to protect fish through a temperature standard?
- The guidance goes beyond just "criteria" recommendations and inappropriately specifies Clean Water Act (CWA) implementation activities, particularly with respect to temperature management plans and antidegradation implementation.
- The guidance is too inflexible, and should be more "principle" oriented and less prescriptive.
- The guidance allows too much flexibility, which could undermine the protection of fish.
- Since "interim" species life stage (SLS) criteria would eventually be replaced by thermal potential criteria, there is little incentive to meet the SLS criteria because the thermal potential criteria is likely to be warmer in many areas.
- It is difficult to understand the relationship between water quality standards, Total Maximum Daily Loads (TMDLs), and National Pollutant Discharge Elimination System (NPDES) permits and how this guidance would impact the CWA program as a whole.

Comments on Thermal Potential Numeric Criteria

- Time and cost to develop thermal potential criteria may be excessive and may yield too little benefit. Instead, the guidance should advocate estimating "natural" undisturbed conditions.
- What is considered an irreversible human impact? For example, are water rights considered irreversible? Equity issues could potentially arise as some activities are deemed irreversible and others are not. The notion of what is irreversible may change over time.
- Models are difficult for a layperson to understand and critique. Only those with significant resources can provide input/influence on thermal potential criteria. This is unfair to entities with few resources since they may ultimately bare the burden of meeting the standards.
- If thermal potential criteria vary across a watershed, what is the scale by which the criteria would vary (*e.g.*, by river mile or river reaches)?

- How would thermal potential criteria address seasonal and inter-annual variability? That is, would there be different thermal potential criteria for different times of the year and for different annual climatic conditions?
- There is a potential equity problem with thermal potential criteria if different parts of the watershed have different criteria. That is, those with a colder criteria adjacent to their land may feel they are receiving unequal treatment relative to others with warmer criteria adjacent to their land.

Comments on Species-Life-Stage Numeric Criteria

- The use of “optimal” temperature ranges is inappropriate for setting water quality standards.
- The SLS criteria are not achievable in many places, particularly in warmer climates.
- There seems to be a disconnect between the recommended SLS criteria and what we observe in Northwest rivers today. For example, some relatively undisturbed watersheds with fish populations regularly exceed the SLS criteria in the summer (e.g., Lochsa river in Idaho). This seems illogical.
- Warmer than optimal water temperature serves as a signal for juvenile fish to migrate downstream, thus warmer than optimal water is a natural component of the river system with ecological significance.
- There is no geographic differentiation for the SLS criteria (one size fits all approach). There may be differences in temperature adaption between populations in different geographic areas.

Comments on Temperature Management Plans

- What are and who determines “all feasible steps?” Mandating “all feasible steps” for point sources may be inappropriate (not cost-effective) because non-point sources contribute more to temperature problems.
- How the 77 degree threshold is intended to apply is unclear. Does it apply end-of-pipe or does it apply at the edge of the mixing zone? Is a mixing zone allowed? It seems that 77 degrees is overprotective for the protection of localized lethal conditions.
- Is the offset provision feasible? How would offsite mitigative activities be included in an NPDES permit? If offsets cannot be acquired for land management practices that are required by federal or state law, then there may not be any offsets available. For instance, Oregon TMDLs typically set a zero allocation for non-point sources, which means they are required to meet site thermal potential under state law.

- Why did the guidance not include the option for non-point temperature management plans?
- The guidance needs clarity on the difference between temperature and temperature load. These concepts are different.
- There may be a potential backsliding issue if a source seeks to comply with the “interim” SLS criteria, and then confronts the adoption of a warmer thermal potential criteria. The source may not have the option to later warm their discharge to meet the thermal potential criteria due to anti-backsliding requirements.

Comments on Protection of Cold Water Areas

- The provision prohibiting temperature increases for areas of cold water refugia (*i.e.*, outstanding natural resource waters) raises some potential problems. How far upstream will potential thermal impact be considered? There are a number of activities that this provision might impact which are not typically reviewed for water quality impacts (*e.g.*, water withdrawals from the river or an aquifer that impacts the cold water refugia)? Who would conduct this review?
- Would the provision prohibiting temperature increases for cold water refugia apply all year around, even in the winter?
- A problem with the use of outstanding natural resource water designations to protect areas of cold water refugia is that the no-increase provision applies for all pollutants, not just temperature.
- It might be difficult and time consuming to identify areas of cold water refugia. What is the scale of these areas?

RECORD OF WORKSHOP COMMENTS

The U.S. Environmental Protection Agency (EPA) Region 10 has developed regional guidance to meet the biological requirements of native salmonids as part of the Endangered Species Act, provide restoration and maintenance of surface water temperature under the Clean Water Act, and meet Federal trust responsibilities to the Tribes.

EPA issued its draft guidance, *State and Tribal Guidance on Temperature Water Quality Standards*, in November 2001. EPA then sponsored four public workshops in Oregon, Washington and Idaho in December 2001 and February 2002 to inform the public about the technical and policy decisions being made in the guidance and gather public comments on those decisions.

The three workshops were held in Salem, Oregon; Lacey, Washington; and Boise, Idaho on December 4, 5 and 6, 2001, respectively. A fourth workshop was held on February 12 in Kennewick, Washington. The workshops were educational and informal, creating an environment that encouraged the public to actively participate in dialogue. Each workshop was approximately four hours in duration, provided attendees an overview of the guidance along with the opportunity to ask clarifying questions, express concerns, and make comments and suggestions on the draft guidance.

The public workshops resulted in an improved understanding of stakeholder concerns and comments regarding the draft guidance. Questions, comments and recommendations resulting from each of the three workshops were recorded by a facilitator and are presented below in the following order:

- I. General Issues
- II. Thermal Potential Numeric Criteria
- III. Species Life Stage Numeric Criteria
- IV. Temperature Management Plans
- V. Protection of Existing Cold Water Areas

EPA Region 10 plans to respond to questions, comments and recommendations captured during the workshops along with those resulting from the written public comment process closing on February 22, 2002.

Note: A fourth workshop was held on February 12 in Kennewick, Washington. The information from that workshop will be added to this report following the public comment period.

I. GENERAL ISSUES**Salem, Oregon**

- Are salmon really on the decline? Sources say we have had recent great runs on the Columbia River (Bonneville, 1938). Why all these efforts if we have healthy salmon populations?
- Do the U.S. Fish and Wildlife Service and the National Marine Fisheries Service fully support the guidance?
- What are the costs to the State in terms of implementing this guidance?

Lacey, Washington

- EPA should clarify that this guidance only applies to fresh water (not marine water).
- Does this guidance apply to man-made waterways, such as ship canals? What about farm ditches that have been invaded by salmonids (coastal farms)? Do standards apply to non-salmonid waters, such as wetlands? How are tidal influences in coastal waters addressed?
- What differentiates a moderately cold species from a cold species?
- Is there a way to differentiate monitoring by time of day? EPA might consider a streamlined methodology for obtaining data sets so they are comparing similar sets of information.
- What is the importance of thermal refugia? If this is an important concept, even on a small scale, it should be resolved with the thermal mixing concept throughout the guidance (point is to recognize importance of warmer waters and not conflict with the concept of protecting cold water refugia).
- Is EPA considering efforts to improve waters for salmonids that are underway (example: National Marine Fisheries Service standards for urban watersheds)? If not, EPA should coordinate with the Services or others involved and integrate these efforts.
- Is EPA treating temperature differently than other pollutants? What is the authority for doing so?
- As it stands, the draft guidance mixes actual guidance (thermal potential numeric criteria, species-life-stage criteria) with provisions that go beyond guidance (temperature management plans, protection of existing cold waters). EPA should limit guidance to current and potential salmonid populations and should eliminate implementation mechanisms from the guidance.

- If the state decided to adopt the EPA guidance, and if there is a lawsuit resulting from the implementation of the guidance, who handles the case (EPA or the state)?
- EPA should revisit its approach to the guidance and build it more from the bottom up instead from the top down.
- The guidance offers flexibility and is not stringent.
- What information does the state need to deliver to EPA (the package) in order to prove adherence to the guidance (numeric, anti-degradation, Total Maximum Daily Loads?)

Boise, Idaho

- Private sector and state agencies other than the Idaho Department of Environmental Quality should be involved in the development of temperature water quality standard guidance.
- EPA should change the assumptions that underlie the guidance. Although “optimal conditions” are assumed by the workgroup, such conditions are not consistent with the law. The guidance is unworkable, standards are not achievable and will not improve conditions for fish.
- Have we spent funds to develop a guidance that is not achievable or impracticable to achieve? What is the process for the scientific community to comment? How can the approach be modified scientifically? An element of flexibility should be incorporated into the guidance, so that new scientific information can be incorporated into the guidance (EPA should develop a plan for building in new information).
- Has all relevant existing information been utilized by EPA in developing the guidance? Research papers developed by Lee Weber and Kate Sullivan were specifically referenced. The finalized guidance will be a yardstick; thus, EPA should use all information and not “cherry pick” scientific information to meet their goals.
- Once finalized, the state will be up against EPA to make their guidance as stringent and protective of fish. EPA can aim at maintaining flexibility, but once the guidance is finalized the state must work with EPA within the limits of the guidance document. This will result in inflexibility.
- EPA should include an economic assessment regarding the costs to the states from guidance implementation. Costs should include modeling and implementation by landowners (costs related to on-the-ground implementation have not been developed). Oregon’s cost to develop sub-basin modeling is roughly \$200,000 - 300,000 per sub-basin, and this might be able to be used as a baseline for extrapolation.

II. THERMAL POTENTIAL NUMERIC CRITERIA

Salem, Oregon

- In consideration of human use, is thermal potential profile static or dynamic with respect to climate variability?
- Is the confidence range (associated with the upper and lower boundary of estimated natural thermal profile) static or absolute?
- Does the process to determine natural thermal potential consider flows? EPA needs to look at natural flows and variable temperatures associated with these flows.
- On the potential to express thermal potential numeric criteria as part of a TMDL, could streams be delisted after a TMDL is written if narrative criteria is met? Also, if a river is 303(d) listed, discharges a thermal load, and does not have a TMDL, it is uncertain what regulatory scheme applies.
- Scaling issues associated with the 4th field HUC need to be resolved.
- Irreversible anthropogenic effects are not well defined.
- Impacts from long-term climatic change do not appear to be taken into account. EPA should take steps to determine how to address this issue now and into the future. Climatic change should be considered non-reversible. EPA should consider consulting a climatologist on this issue.
- Day/night variability is not well-defined within the guidance. This will be particularly important during the hottest part of the year.
- Models are complicated, and modeling data for historic conditions will be difficult to obtain. The time frame for historic conditions (*i.e.*, how far to go back in time) is unclear. Models will need to lay out data assumptions and recognize uncertainty. There is a need to make this process transparent to the layperson so that the public can understand the models (and so landowners have a sense about how to develop them).
- The only entities that can afford to develop robust models are those who have financial security and can spend money on model development. In this context, the smaller business/landowner may be hurt.
- The topic of allowances for human use is unclear: is EPA looking for some incremented number to account for human use or model out specific anthropogenic impacts?
- Costs are an issue. This guidance sets out steps that will be time consuming and costly for the state. It appears to go beyond TMDLs, and could potentially be a much greater commitment to water quality than what is committed now.

- The guidance, as it stands, does not provide a detailed process for state/tribal implementation and there are many unresolved policy issues. The February 22nd deadline seems appropriate for broad-level stakeholder feedback, but not for specific details.
- The approach to highly altered streams does not make sense. Given that these streams could never realistically achieve historic conditions, EPA might want to treat them differently.
- The range of thermal potential at different times of the year is an important consideration.
- The recommended process to establish thermal potential numeric criteria for temperature based on multiple lines of evidence (Appendix B) should be responsive, or flexible, in relation to changes in our knowledge base.

Lacey, Washington

- Irreversible anthropogenic effects are not well-defined. EPA should clarify what it means by irreversible (more explicit guidance is needed). Society's willingness to pay for reversing irreversible effects should be considered when defining what is/is not irreversible.
- How does EPA recommend that states identify where char migration is occurring?
- It is unclear how EPA intends to guide states/tribes in modeling for irreversible conditions. How does one allow for human use in a model?
- The difference between the guidance (criteria, temperature management plans, etc.) and the criteria (quality of water is what's needed to protect salmon) should be distinguished. Right now, the concepts are mixed.
- EPA should take a step back and consider the time and resources needed in establishing thermal potential criteria. EPA might consider a pilot (including a consultation process) to get a better estimate on costs. The outcome of such a pilot should be completed prior to guidance finalization.
- The costs of establishing thermal potential numeric criteria may be too high. To obtain a more accurate estimate of costs, EPA should examine the Oregon TMDL costs and multiply that by the number of sub-basins per state.

Another comment was made that implementation of the EPA guidance would reduce the resources needed for the ongoing TMDL efforts in the Pacific Northwest.

- More clarity is needed regarding the modeling approach (how to model, tools, etc.).

- The need to establish criteria that apply to historic conditions (pre-European) was challenged. What authority is this requirement based on?
- The consultation process with the services may result in changes that are not apparent to third parties (the regulated community). Is there a way third parties can weigh in during that process?
- EPA should consider the temperature-to-production ratio in their guidance since better production of salmonids is what we are trying to achieve.
- The burden of proof of whether salmonids exist/could exist unfairly resides with permittees under the current scheme.
- What is the increment by which thermal potential criteria needs to be established? Mile-by-mile? What length segment of streams?
- EPA should consider establishing an information repository so that those involved with establishing thermal potential criteria can share information and methodologies with one another.
- How will thermal potential criteria be expressed, as a water quality standard or a TMDL? If species-life-stage criteria is applied first, EPA should recognize that it might be something we live with in the Pacific Northwest for a long time. If thermal potential is expressed in TMDL, EPA, the State, and Tribes might be able to implement criteria more easily (less rigorous process, fewer administrative processes).

Boise, Idaho

- What criteria would EPA use to determine reversibility? Is EPA going to leave it up to the states to decide? Depending upon time, money, or political support, almost any action may be considered reversible. Will EPA target certain users and not others? EPA should consider inequities imposed on land owners and others when defining irreversibility.
- The process to develop thermal potential criteria will likely be labor intensive, complex, controversial, and dependent on varying levels of data availability. Has thermal potential criteria ever been completed? This may be so laborious and resource intensive that it might not be a worthwhile investment. If EPA can not finish a study or finishes a study that yields controversial criteria, costs may exceed benefits.
- The validity of models given data gaps was called into question. Is the data available, will models accurately predict, and how conservative are the bounds? The process used to set natural thermal potential boundaries will be critical and depends heavily on assumptions. How conservative are these assumptions?

- Alternative approaches to thermal potential criteria for point sources and non-point sources were suggested. For point sources, EPA should require “no measurable effect” at edge of mixing zone relative to current stream temperature and should set the instantaneous lethality at 33 degrees Centigrade. Temperature management plans could then be used to reduce effluent temperatures. This approach would enable point sources to begin implementing something meaningful. For non-point sources, EPA should encourage voluntary goals and best management practices primarily for species life stage criteria. Non-point sources could start working on more practicable and implementable efforts.
- Is EPA negating the TMDL process by eliminating mixing zones in its analysis? The temperature management plan serves as a mixing zone. EPA has included the concept of offsets -- this differs from the Oregon approach and thwarts the TMDL process.

III. INTERIM SPECIES-LIFE-STAGE NUMERIC CRITERIA

Salem, Oregon

- Why are steelhead smolts singled out? Why are they more sensitive? Is there good evidence that steelhead smolts exist? Where?
- What is the basis for numeric criteria -- field or lab studies?
- The duration of exposure for temperature needs to be addressed (mixing zones, threshold, etc).
- What if species life stage criteria is more stringent than a state’s thermal potential criteria? Will mitigation count once the thermal potential applies?
- On the topic of inter-annual meteorological conditions, the median conditions may not be protective enough. EPA should address this issue.
- Fish need diverse temperature patterns. This comment was made in reference to why we need warmer water because warmer water signals biological responses.
- EPA needs to determine ways to apply criteria that recognize that some river reaches in the northwest naturally experience higher temperatures than the criteria. There are few temperature gauges that are unaffected by dams, a small amount of discharge on larger rivers, and little data on a sub basin scale. Recommendation: correlate to discharge on sub-basin level to impact confidence level.
- Entities will be reluctant to invest in methods to attain species life stage numeric criteria if thresholds change with the development of thermal potential numeric criteria (potential loss in investment depending on whether temperature criteria increases or decreases with thermal potential criteria).
- Use of “optimal” criteria may be inappropriate; there may be a need to collect more field data to substantiate use of the optimal criteria.

- EPA should clarify what “weekly mean temperature” means, in that it is actually a seven day average mean.
- In relation to river reaches with natural and man made barriers (dams, log jams, etc.), it is unclear whether EPA will apply SLS numeric criteria to where fish are now or where they could be in the future. Although EPA explained that it intends to approach this via potential numeric criteria, it should be clarified in the guidance.
- The goal of sustainable and harvestable native populations is unclear, especially in relation to native vs. hatchery fish.
- Without proof, EPA/states/tribes should not assume that the absence of fish indicates population declines due to changes in temperature. Recommendation: do not rely on fish surveys alone. Rely on habitat surveys and species distribution assessments as well.

Lacey, Washington

- Will criteria be non-applicable until species distribution is clear? How does EPA intend to differentiate between char and salmon locations? How do we limit the downstream/upstream bounds of presence? This issue might present a particular difficulty in determining thermal potential (specific comment referred to bull trout and other migratory species).
- EPA might consider constructing seasonal maps (for spawning criteria/migration) that identify river sections as part of criteria.
- Mixing/matching metrics for the species life stage criteria is inappropriate -- this should be streamlined (comparison of apples to apples).
- The seasonal temperature criteria is influenced by the natural physical relationship - this should be considered in the guidance; otherwise the shape of the curve showing the thermal potential profile will be skewed.
- What happens if the species life stage criteria is unattainable? Does a river/stream then become 303(d) listed?
- Is there a way to delay the consequences of implementing species life stage criteria until thermal potential criteria gives us better information?
- Is the species life stage criteria functioning as effluent limits? The offsets provision appears to go beyond the scope of the guidance and is beyond normal EPA purview (guidance is too stringent and goes beyond objectives).
- Permit writers should be consulted in developing the final guidance as a reality check.

Boise, Idaho

- Do species life stage criteria temperature standards for salmonids apply to bull trout? If the standard is applied statewide and certain population evolved in different areas with variable temperatures, is EPA using a one-size-fits-all approach inappropriately? EPA should consider geographic location when establishing criteria.
- EPA should utilize population-specific distributions to influence species life stage criteria (population specific criteria). The Agency should also maintain the ability to change numbers as more information is obtained.
- Are the species life stage criteria physically achievable? EPA should examine whether temperatures in undisturbed areas mirror species life stage criteria to determine if the numbers are based on reality (good surrogate for pre-European). *(This statement resulted from concerns that Idaho will not be capable of meeting interim species life stage numeric criteria.)* The numbers proposed in the guidance are unreasonable and exemplify conflict between the ESA and CWA. National Marine Fisheries Service is looking for the most “optimum” conditions and these numbers do not reflect real world conditions. As an example, the Lochsa River is a fairly undisturbed water body with abundant fish populations and the fact that it does not meet current Water Quality Standards does not make sense. Other examples include the Snake River and the Lower Clearwater -- both have temperatures above 70 degrees.
- Many conditions today are better than they were hundreds of years ago, so it may not make sense to attempt to re-establish historic conditions (example, there were once fewer trees and more fires in certain watersheds than there are today).
- Land users can only follow best management practices and land users are worried that EPA is adding a complicated process to what is currently working.
- Species life stage numbers are unreasonable and show that EPA has developed an academic exercise with no practicality. Although the Services are searching for “optimum” conditions, there is no application to the real world. There is a disconnect between the science, the modeling and the presence of fish. Wild streams should act as surrogates. Models should be truth-tested against real stream conditions.
- What if a river has healthy fish populations under sub-optimal conditions, or if there are no fish in cold, healthy habitats? Doesn't this present a problem? Why isn't there a fish health criteria rather than a temperature criteria?
- EPA ought to clarify the definitions of “thriving” and “meager” -- did EPA mean “viable” when using the word “thriving”?

IV. TEMPERATURE MANAGEMENT PLANS

Salem, Oregon

- What are “all feasible steps” defined as within the guidance under the temperature management plan provision?
- More clarification is needed in relation to the intended protection for the 77 degree Fahrenheit threshold.
- Non-point source contributions to temperature increases may be greater than point sources. For this reason, whether point-sources should be tasked with implementing “all feasible alternatives” is questionable. In relation to non-point sources, EPA might wish to consider offsetting between point and non-point sources as potential new trading markets (between point and non-point sources).
- Whether dams are treated as point or non-point sources is unclear in the guidance.
- Those entities who undertake mitigation activities under species life stage criteria may no longer get credit when thermal potential numeric criteria is established. Although EPA clarified in the workshop that entities will still get credit as long as the mitigation activity was not implemented as federal/state requirements, this concept needs to be further clarified in the guidance.
- The difference between temperature and thermal load needs to be distinguished. In temperature management plans, dilution with colder water does not reduce thermal load.
- Heat is not a conservative pollutant, and “optimal” temperatures may not be the best way to set the standard.
- Increasing temperature is not the same as increasing thermal heat load.
- The expectations on National Pollutant Discharge Elimination System (NPDES) permittees are unclear given that language about “all feasible steps.”
- The Columbia River TMDL implies that tributaries have a minor impact; this finding is contrary to how the guidance views tributary contribution to salmon populations.
- Offsets for non-point sources are unclear. Although EPA indicated that non-point sources have been delegated to the states, temperature management plans can be a mechanism to regulate non-point sources.

Lacey, Washington

- Are temperature management plans specific to NPDES permittees only?
- How are “all feasible steps” defined within the guidance under the temperature management plan provisions? Society’s willingness to pay for these steps should be considered.
- The temperature management plans are too stringent and confuse the process for water quality standards and how states set NPDES limits. If a permittee discharges higher than criteria, effluent standards will apply. EPA should examine the Oregon temperature management plan for clarity.
- EPA should clarify the objectives of the temperature management plans -- is the goal to maintain the status quo or to improve the current situation until TMDLs are completed and implemented?
- How will EPA handle dilution from impaired waters?
- EPA should use existing data that has been submitted to Ecology. Specifically, EPA should consider warming from the sun (investigate solar contribution).
- EPA should consider impacts to both existing permits and new permits - impacts could vary considerably and may introduce inequities.
- Is the case study in the eastern Cascades addressing point sources and non-point sources?
- The concept of creating offsets is a good attempt to save salmon and shows that EPA is serious in its efforts to make the temperature management plans more flexible; however, offsets can create uncertainties and may not be realistic to implement. Would responsibilities be based on land use and could they change over time?
- If an NPDES permittee is in compliance with water quality criteria at the edge of a mixing zone, would the permittee be required to reduce the temperature of the effluent if the species life stage temperature criteria is not met?

Boise, Idaho

- When EPA established the 77 degree lethal temperature, did it base that threshold on a certain time frame?
- The process set forth in the temperature management plans does not currently consider mixing zones.
- Plans under the Idaho Forest Practices Act (best management practices and other requirements to protect water quality) and non-point source programs should constitute legitimate temperature management plans.

V. PROTECTION OF EXISTING COLD WATER AREAS**Salem, Oregon**

- Does EPA intend that the no net increases in cold water be applied year-round?
- Appropriated water uses (current, past and future) may be threatened. Water rights may be compromised in the future in relation to cold water refugia designations.
- The burden of proof to determine locations of cold water refugia likely resides with landowners. EPA will need to think of “what if” scenarios in order to anticipate inequities and other problems.
- It is unclear whether water quality standards will be impacted by the state designation of outstanding water resources.
- How does EPA plan to address situations when sediments deposited in stream beds have generated warmer temperatures, such as in western Oregon?
- Protection of existing cold waters should only apply when water quality standards are limited (summertime). EPA should address this more explicitly in the guidance so that it is consistently interpreted.
- East of the Cascades, identification of cold water refugia is likely to be expensive. EPA should consider using macroinvertebrates as an indicator for cold water refugia.
- Optimal thermal requirements for habitat may be unrealistic. EPA should examine percentages or the amount of stream miles instead of trying to obtain optimal levels on all reaches in all areas. To an extent, EPA is taking this into account through spatial/temporal optimal vs. sub-optimal considerations, but it needs to be further clarified in the guidance.

Lacey, Washington

- Is EPA attempting to protect existing cold waters or re-establish historic conditions?
- Like temperature management plans, this is a provision that exceeds the scope of the guidance.
- How does EPA advise states/tribes to handle water over-allocations? Example: groundwater withdrawals might impact thermal load. What about buying in-stream water rights?
- More guidance is needed on anti-degradation and designation of cold water refugia. More explicitly, how cold does EPA expect refugia to be?
- When cold water refugia is designated as outstanding resource water, does this mean there are no heat inputs upstream of that point? What are the ramifications upstream? This might present difficulty for permitting authorities.
- What are the implications to sole source aquifers when a cold water spring is considered a refuge for fish?
- What is the significance of “points to increment” definition? This issue should be left to the states.

Boise, Idaho

- EPA needs to clarify in the guidance the mechanism for designating outstanding resource waters as cold water refugia.
- What is the science behind the assumption that colder water is always upstream and warmer water is downstream? Does EPA consider dams or natural river blockages in this equation? Does this assumption do the fish any good? Make sure the outstanding resource water designation has value.
- EPA needs to consider “takings” issues in areas where cold water refugia or outstanding resource waters are surrounded entirely by private non-federal lands.
- In Idaho, temperature issues need to be addressed outside of the outstanding resource water designation process.